

REMARKS

Applicants have now had an opportunity to carefully consider the Examiner's comments set forth in the Office Action of November 30, 2005.

Reconsideration of the Application is requested.

The Office Action

The Examiner acknowledges that the finality of the previous Office Action has been withdrawn pursuant to 37 CFR §1.114 and that Applicant's submission filed on August 22, 2005 has been entered. Applicants understand the Examiner to mean the Amendment accompanying the Request for Continued Examination filed on August 19, 2005.

Claims 1-9, 16-20, and 22-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,348,971 issued to Owa et al. (Owa) in view of U.S. Patent Application No. 2001/0052995 filed by Idehara.

Claims 10-15 and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Owa and Idehara as applied to claims 1 and/or 16, and further in view of U.S. Patent No. 5,287,194 issued to Lobiondo.

The Art Rejections

Claim 1 Patentable over Owa and Idehara

With reference to independent claim 1, and claims 2-9 and 23-24 depending therefrom, all rejections are respectfully traversed by Applicants. In the Office Action, the Examiner asserts that Owa teaches partitioning a printshop into autonomous cells, each printer accommodating its own location/cell. The Examiner further asserts that Owa teaches dividing the resources of the printshop between the autonomous cells, wherein a printer in each cell/location has the capabilities to complete the print job alone. However, Applicants submit that Owa fails to teach or fairly suggest partitioning a printshop into autonomous cells in a fashion similar to the disclosure and claim 1 of the present application.

Partitioning a printshop into autonomous cells comprises configuring and/or organizing, including moving, grouping, adding and deleting the resources of the printshop in and/or from the autonomous cells so as to attain the most efficient and cost effective configuration of cells. Owa does not partition the printshop into autonomous cells. Owa simply maps print jobs onto an existing configuration of printers. This is not

the same as partitioning or configuring the printshop into autonomous cells where resources can be reconfigured and/or repartitioned to more efficiently handle a possible change in the workflow of the printshop.

In particular, the printers disclosed by Owa each constitute a resource capable of completing a print job as opposed to a grouping of a plurality of resources in order to be able to complete at least one class of print jobs. Owa does not teach or fairly suggest any grouping of two or more printers in order to complete a print job. On the other hand, independent claim 1 of the present application, as amended, recites a limitation “wherein the virtual autonomous cells each contain a combination of resources, at least two of the resources of the combination of resources being necessary to complete the at least one class of print job.” In other words, a combination of two or more resources is used in order to successfully complete a class of print jobs.

Further, Owa fails to teach or fairly suggest reconfiguring the printers to process a print job which none of the printers is able to complete individually. Claim 1 of the present application, as amended, also recites a limitation for “mapping the print job onto a new mapping of the existing virtual autonomous cells when no existing virtual autonomous cell contains representations of a combination of resources capable of independently completing the print job.” Owa does not teach or fairly suggest such a feature.

The Examiner also asserts that Idehara teaches a method for creating/partitioning a printshop into virtual autonomous cells representing physical autonomous cells. Although the cited Figures 9-10 and paragraphs 114-118 disclose a virtual representation of the physical arrangements of resources/printers of the printshop, as argued above with reference to Owa, Idehara does not teach or suggest combining two or more of the printers into a single cell for the purpose of having sufficient resources in the cell to independently complete a print job. Nor does Idehara teach or suggest the above-recited feature of claim 1 regarding reconfiguring the autonomous cells to process a print job which none of the existing cells is able to complete individually.

For at least these reasons, independent claim 1, as amended, and claims 2-9 and 23-24 depending therefrom, distinguish over the cited reference and are in condition for allowance.

Claim 9 Patentable over Owa and Idehara

With reference to claim 9 which depends from claim 1, the examiner’s rejection is

respectfully traversed by Applicants. Claim 9 recites a limitation whereby “a selected one of the virtual autonomous cells is assigned multiple print jobs for concurrently processing the multiple print jobs.” The Examiner asserts with reference to claim 1 of the present application, that each printer of Owa accommodates its own cell. Applicants submit that claim 9 distinguishes over Owa by the fact that the printer (a single cell) of Owa cannot concurrently process smaller lots within the single cell. A cell (printer) of Owa completely processes one print job before it can start printing another print job, whereas the autonomous cells of the present application can be printing one print job concurrent with binding another print job and/or shrink wrapping another. It is even possible for the autonomous cell of claim 9 to include more than one printer, thereby enabling concurrent printing of more than one print job.

For at least these reasons, and for the reasons provided with respect to independent claim 1, as amended, dependent claim 9 distinguishes over the cited reference and is in condition for allowance.

Claim 10 Patentable over Owa, Idehara and Lobiondo

With reference now to independent claim 10, and claims 11-15 depending therefrom, all rejections are respectfully traversed by Applicants. In the Office Action, the Examiner asserts that Owa and Idehara teach the recited limitations of claim 10 except that the combination of Owa and Idehara fail to teach or suggest dividing the print job into lots and concurrently processing the lots using the resources of the selected virtual autonomous cell. However, Applicants respectfully submit that the combination of Owa and Idehara fails to teach or fairly suggest remapping the printers to process a print job which none of the printers is able to complete individually. Claim 10 of the present application, as amended, recites three limitations in this regard. First, a determining step determines “if the print job fits at least one of the existing virtual autonomous cells, the fitted virtual autonomous cell including a combination of resources capable of completing the print job.” For print job cases where no existing fit is available, a second limitation is provided for “generating a new mapping of the virtual autonomous cells such that the print job fits at least one of the virtual autonomous cells of the new mapping.” Finally, a limitation is provided for sending the print job to a selected cell, “the selected one of the virtual autonomous cells being selected from one of the existing virtual autonomous cells or one of the virtual autonomous cells of the new mapping.” The combination of Owa and Idehara does not teach or fairly suggest such a feature.

Applicants respectfully traverse the Examiner's assertion that Lobiondo teaches a method for dividing print jobs into lots and concurrently processing the lots using the resources of the selected virtual autonomous cell. As stated in the Abstract, Lobiondo discloses a scheduling routine that "utilizes the total complex of printers available at local and/or remote locations to allocate and complete printer jobs." Applicants can find no teaching or suggestion in Lobiondo relating to dividing the resources of the print shop into autonomous cells, but instead find that Lobiondo teaches utilizing the total complex of printers available (Abstract). The Examiner, therefore, is apparently likening the total resources of Lobiondo to the selected virtual autonomous cell of the present application in making this argument. However, this contradicts the Examiner's reasoning with reference to the rejection of claim 1 where the Examiner likens each printer to a location/cell. However, if this same printer/cell line of reasoning is continued with reference to Lobiondo, Applicants can find no teaching or suggestion in Lobiondo where an individual printer (cell) is used to concurrently process a print job, but instead find that Lobiondo teaches allocating the print job "to a plurality of available printers, each printing a portion of the complete print job." Claim 10 of the present application, as amended, however, recites a limitation for "dividing the print job into lots and concurrently processing the lots using the resources of the selected virtual autonomous cell."

For at least these reasons, independent claim 10, and claims 11-15 depending therefrom, distinguish over the cited reference and are in condition for allowance.

Claim 16 Patentable over Owa and Idehara

With reference now to independent claim 16, and claims 17-22 and 25-26 depending therefrom, all rejections are respectfully traversed by Applicants. In the Office Action, the Examiner asserts that Owa teaches the steps of identifying products (host computers), identifying operations (host computers), determining printshop resources that are required (determines which printer is to complete the print job), and partitioning the printshop into autonomous cells (a printer in each location/cell has the capacities to complete the print job). However, Applicants respectfully submit that Owa fails to teach or fairly suggest partitioning printshop resources into autonomous cells in a fashion similar to the disclosure and claim 16 of the present application.

As discussed above with reference to claim 1, partitioning printshop resources into autonomous cells comprises configuring and/or organizing, including moving, grouping, adding and deleting the resources of the printshop in and/or from the

autonomous cells so as to attain the most efficient and cost effective configuration of cells. Owa does not partition the printshop into autonomous cells. Rather, Owa simply maps print jobs onto an existing configuration of printers. This is not the same as partitioning or configuring printshop resources into autonomous cells where resources can be reconfigured and/or repartitioned to more efficiently handle a possible change in the workflow of the printshop.

Again, as discussed above, the printers disclosed by Owa each constitute a resource capable of completing a print job as opposed to a grouping of a plurality of resources in order to be able to complete at least one class of print jobs. Owa does not teach or fairly suggest any grouping of two or more printers in order to complete a print job. On the other hand, independent claim 16 of the present application, as amended, recites a limitation "wherein the virtual autonomous cells each contain a combination of printshop resources, at least two of the resources of the combination of printshop resources being necessary to produce at least one of the products." In other words, two or more printshop resources are used in order to successfully produce at least one type of product.

Further, Owa fails to teach or fairly suggest remapping the printers to process a print job which none of the printers is able to complete individually. Claim 16 of the present application, as amended, also recites a limitation for "generating a new mapping of the virtual autonomous cells such that a new product fits at least one of the virtual autonomous cells of the new mapping based on the determined number of printshop resources required for the new product." Owa does not teach or fairly suggest such a feature.

As with claim 1, the Examiner asserts that Idehara teaches a method for creating/partitioning a printshop into virtual autonomous cells representing physical autonomous cells. Although the cited Figures 9-10 and paragraphs 114-118 disclose a virtual representation of the physical arrangements of resources/printers of the printshop, as argued above with reference to Owa, Idehara does not teach or suggest combining two or more of the printers into a single cell for the purpose of having sufficient resources in the cell to independently complete a print job. Nor does Idehara teach or suggest the above-recited feature of claim 16 regarding generating a new mapping of the autonomous cells to process a print job which none of the existing cells is able to complete individually.

For at least these reasons, independent claim 16, and claims 17-22 and 25-26

depending therefrom, distinguish over the cited reference and are in condition for allowance.

Claim 21 Patentable over Owa, Idehara and Lobiondo

Finally, with reference to claim 21 which depends from claims 16 and 20 respectively, the Examiner's rejection is respectfully traversed by Applicants. Claim 21 recites a limitation for "dividing the print job into smaller sized lots and concurrently processing the smaller sized lots using the resources of the selected virtual autonomous cell." Applicants respectfully traverse the Examiner's assertion that Lobiondo teaches dividing the print job into smaller sized lots and concurrently processing the smaller sized lots using the resources of the selected autonomous cell. As discussed above, Lobiondo discloses in the Abstract a scheduling routine that "utilizes the total complex of printers available at local and/or remote locations to allocate and complete printer jobs." Applicants can find no teaching or suggestion in Lobiondo relating to dividing the resources of the print shop into autonomous cells, but instead find that Lobiondo teaches utilizing the total complex of printers available. And again, this contradicts the Examiner's reasoning with reference to the rejection of claims 1 and 16 where the Examiner likens each printer to a location/cell, and Applicants can find no teaching or suggestion in Lobiondo where an individual printer/location (cell) is used to concurrently process a print job, but instead find that Lobiondo teaches allocating the print job "to a plurality of available printers, each printing a portion of the complete print job." Applicants submit, therefore, that claim 21 distinguishes over the cited references by the fact that the printer (a single cell) of Owa, Idehara and Lobiondo cannot concurrently process smaller lots within the single cell. A cell (printer) of the cited references completely processes one print job before it can start printing another print job, whereas the autonomous cells of the present application can be printing one print job concurrent with binding another print job and/or shrink wrapping another as stated above.

For at least these reasons, and for the reasons provided with respect to independent claim 16, as amended, dependent claim 21 distinguishes over the cited reference and is in condition for allowance.

CONCLUSION

For the reasons detailed above, it is submitted all claims remaining in the application (Claims 1-26) are now in condition for allowance. The foregoing comments do not require unnecessary additional search or examination.

Prior art references considered pertinent to Applicants' disclosure and made of record, but not relied upon by the Examiner, have been reviewed by Applicants. Applicant submits that these references alone or in combination do not teach the present invention.

No additional fee is believed to be required for this Amendment C. However, the undersigned attorney of record hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Deposit Account No. 24-0037.

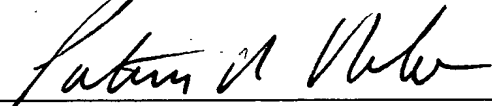
In the event the Examiner considers personal contact advantageous to the disposition of this case, he/she is hereby authorized to call Patrick R. Roche, at Telephone Number (216) 861-5582.

Respectfully submitted,

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Date



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